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10/822,133	04/09/2004	Kenneth Perlin	NYU-10	2476

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EXAMINER	
JEN, MINGJEN	

ART UNIT	PAPER NUMBER
3664	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/822,133	PERLIN ET AL.	
	Examiner	Art Unit	
	IAN JEN	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15,18-22 and 29-35* is/are pending in the application.

4a) Of the above claim(s) *16,17,23-28 and 36-39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *16,17,23-28 and 36-39* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 April 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This action is response to the communication filed on November 11,2007

2. Claims 1 – 39 are pending in this action.

3. Claims 1, 10, 12, 13, 14 have been amended.

4. Claims 16 – 39 have been newly added.

5. The objection with respect to specification has not been corrected.

Specification

5. The abstract of the disclosure is objected to exceed one hundred fifty words limit. Correction is required. See MPEP § 608.01(b).

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to express a recognizable image shown in Fig 1, 3 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of

the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Election/Restrictions

6. Newly submitted claims 16,17,36-39, 23-28 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 16, 17, 36 – 39 are directed to an embodiment wherein the communication from the vehicle is on a cycle.

Claims 23 is directed to an embodiment wherein the surface contains a sealed component which contains vehicles

Claims 16, 17, 23, 36-39 are independent or distinct because claims to the different embodiment recite the mutually exclusive characteristics of such embodiment. In addition, the embodiment is not obvious variants of each other based on the current record.

Claims 24-28 are combination of tracking vehicle and sensing user's command for controlling.

Claims 24 – 28 are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable.

If the claims were originally presented, they would have been restricted under different embodiment and subcombinations.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 16, 17, 36-39, 23-28 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 – 12, 14, 18-20, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al (US Pat No 7082351) in view of Faghri (US Pat No 6950788).

As for Claim 1, Hara et al shows a system for manipulation of objects comprising(Abstract): N objects, where N is greater than or equal to 2 and is an integer; and means for controlling and 2D locating of the N objects(Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 – 48). Hara et al does not show each of the N objects unaware of their respective position and orientation and not in communication with each other.

Faghri shows each of the N objects unaware of their respective position and orientation and not in communication with each other (Abstract, Fig 1, Fig 3, Fig 11, Fig 2, Computer device 10, Processor 14, Main memory 18; Col 4, lines 45 – Col 7, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide a model of objects unaware of position and not communicated with each other, as taught by Faghri et al, to Hara et al, in order to provide a centralized simulation control system.

As for Claim 2, Hara et al shows the controlling means includes indicators disposed on the object (Col 38, lines 5-60).

As for Claim 3, Hara et al shows the controlling means includes sensing means for locating the objects (Col 3, lines 42 – 53).

As for Claim 4, Hara et al shows position indicators include emitters which indicate a position of an object (Col 38, lines 5 -60; Col 59, lines 20-30).

As for Claim 5, Hara et al shows the objects are vehicles (Col 42, lines 61 - Col 43, lines 5 where wheeled robot apparatus moving on the two dimensional plane).

As for Claim 6, Hara et al shows the controlling means includes a vehicle controller disposed with each vehicle (Fig 19, Col 25, lines 61 - Col 26, lines 46).

As for Claim 7, Hara et al shows the vehicle controller of each vehicle includes an MCU (Col 38, lines 42 - Col 39, lines 2).

As for Claim 8, Hara et al shows the sensing means includes sensors (Col 14, lines 49-56).

As for Claim 9, Hara et al shows the emitters include LEDs (Col 46, lines 17-25).

As for Claim 10, Hara et al shows a method for manipulating objects comprising the steps of: receiving information from N objects, where N is greater than or equal to 2 and is an integer, at a centrally controlling and 2D locating controller(Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 - 48); determining 2D locations by the controller of the N objects object (Col 38, lines 5 -60; Col 59, lines 20-30); and transmitting from the controller directions to the N objects for the N objects to move (Col 2, lines 12 - 52). Hara et al does not show each of the N objects unaware of their respective position and orientation and not in communication with each other.

Faghri shows each of the N objects unaware of their respective position and orientation and not in communication with each other (Abstract, Fig 1, Fig 3, Fig 11, Fig 2, Computer device 10, Processor 14, Main memory 18; Col 4, lines 45 – Col 7, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide a model of objects unaware of position and not communicated with each other, as taught by Faghri, to Hara et al, in order to provide a centralized simulation control system.

As for Claim 11, Hara et al shows the transmitting step includes the step of transmitting from the controller kinematic parameters to the N objects (Col 59, lines 16 - 32; Col 55, lines 15 -65).

As for Claim 12, Hara et al shows an apparatus for tracking comprising: N objects, where N is greater than or equal to 2 and is an integer (Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 – 48), each object having an emitter which emits light; and means for 2D sensing of the N objects over time from the light emitted by each emitter (Col 46, lines 17-25). Hara et al does not show each of the N objects unaware of their respective position and orientation and not in communication with each other.

Faghri shows each of the N objects unaware of their respective position and orientation and not in communication with each other (Abstract, Fig 1, Fig 3, Fig 11, Fig 2, Computer device 10, Processor 14, Main memory 18; Col 4, lines 45 – Col 7, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide a model of objects unaware of position and not communicated with each other, as taught by Faghri, to Hara et al, in order to provide a centralized simulation control system.

As for Claim 14, Hara et al shows a method for tracking comprising the steps of: emitting light from N objects, where N is greater than or equal to 2 and is an integer; and sensing 2D locations of the N objects over time from the emitted light from the N objects (Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 - 48; Col 46, lines 17-25). Hara et al does not show each of the N objects unaware of their respective position and orientation and not in communication with each other.

Faghri shows each of the N objects unaware of their respective position and orientation and not in communication with each other (Abstract, Fig 1, Fig 3, Fig 11, Fig 2, Computer device 10, Processor 14, Main memory 18; Col 4, lines 45 – Col 7, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide a model of objects unaware of position and not communicated with each other, as taught by Faghri, to Hara et al, in order to provide a centralized control system.

As for claim 18, Hara shows an apparatus for tracking comprising: N objects, where N is greater than or equal to 2 and is an integer (Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 - 48) , each object having an emitter which emits light (Col 41, lines 30- 50, LED 8) ; and a sensor for 2D sensing of the N objects over time from the light emitted by each emitter (Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 - 48). Hara et al does not show each of the N objects unaware of their respective position and orientation and not in communication with each other.

Faghri shows each of the N objects unaware of their respective position and orientation and not in communication with each other (Abstract, Fig 1, Fig 3, Fig 11, Fig 2, Computer device 10, Processor 14, Main memory 18; Col 4, lines 45 – Col 7, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide a model of objects unaware of position and not communicated with each other, as taught by Faghri, to Hara et al, in order to provide a centralized control system.

As for claim 19, Hara et al shows the objects are vehicles (Col 42, lines 61 - Col 43, lines 5 where wheeled robot apparatus moving on the two dimensional plane).

As for claim 20, Hara et al shows the objects are on vehicles (Col 42, lines 61 - Col 43, lines 5 where the objects are embedded on to wheeled robot apparatus moving on the two dimensional plane).

As for claim 29, claim 29 is equivalent to the claim 20; please refer to claim 20 rejection above.

8. Claim 13, 15, 22, 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al (US Pat No 7082351) in view of Faghri (US Pat No 6950788) and further in view of Storlie et al (US Pat No 5252991).

As for Claim 13, Hara et al shows N objects (Col 42, lines 61 - Col 43, lines 5), element on which the N objects are disposed (Col 42, lines 61 - Col 43, lines 5; Col 42, lines 61 - Col 43, lines 5 where wheeled robot apparatus moving on the two dimensional plane), Hara et al does not show the sensing means includes at least 2 1-D sensors that sense the light emitted from the edge of the planar element on which the objects are disposed.

Storlie et al shows the sensing means includes at least 2 1D snesor that sense the light emitted from the edge of the planar element on which the objects are disposed (Abstract, Fig 2, direct beams 36,38; Fig 3, optical sensor 40,42; Col 2, lines 55 - Col 3, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide sensing means, as taught by Storlie et al, to Hara et al, in order to detect the motion of objects for the central control unit.

As for Claim 15, Hara et al shows sensing 2D locations of the N objects over time from the emitted light from the N objects (Col 42, lines 61 - Col 43, lines 5 where wheeled robot apparatus moving on the two dimensional plane; Col 38, lines 5-60; Col 46, lines 17-25; Fig 1, Col 1, lines 59 - Col 2, lines 40; Col 3, lines 42 - 48; Col 46, lines 17-25). Hara et al does not show sensing through an edge of a planar element on which N objects are disposed.

Storlie et al shows sensing through an edge of a planar elemnt on which N objects are disposed. (Abstract, Fig 2, direct beams 36,38; Fig 3, optical sensor 40,42; Col 2, lines 55 - Col 3, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide sensing means, as taught by Storlie et al, to Hara et al, in order to detect the motion of objects for the central

As for claim 22, Hara et al shows the objects are on a surface (Col 42, lines 61 - Col 43, lines 5 where wheeled robot apparatus moving on the two dimensional plane; Col 38, lines 5-60; Col 46, lines 17-25). Hara et al does not show the sensor senses light at the edge of the surface.

Storlie et al shows show the sensor senses light at the edge of the surface (Abstract, Fig 2, direct beams 36,38; Fig 3, optical sensor 40,42; Col 2, lines 55 - Col 3, lines 65).

It would have been obvious for one of ordinary skill in the art, to provide sensing means, as taught by Storlie et al, to Hara et al, in order to detect the motion of objects for the central control unit.

As for claim 30, claim 30 is equivalent to the claim 19; please refer to claim 19 rejection above.

As for claim 31, claim 31 is equivalent to the claim 20; please refer to claim 20 rejection above.

As for claim 32, claim 32 is equivalent to the claim 19; please refer to claim 19 rejection above.

As for claim 33, claim 33 is equivalent to the claim 20; please refer to claim 20 rejection above.

As for claim 34, claim 34 is equivalent to the claim 19; please refer to claim 19 rejection above.

As for claim 35, claim 35 is equivalent to the claim 20; please refer to claim 20 rejection above.

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hara et al (US Pat No 7082351) in view of Faghri (US Pat No 6950788) and further in view of Kanayama et al (US Pat No 5719762).

As for claim 21, Hara et al does not show vehicles capable of holomonic motion. Kanayama shows vehicles capable of holomonic motion (Fig 2; Col 2, lines 15 - 30).

It is obvious for one of ordinary skill in the art, to provide holomonic motion, as taught by Kanayama, to Hara et al, in order to provide a collision impact minimize means for group objects.

Response to Arguments

10. Applicant's arguments with respect to claims 1 – 39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IAN JEN whose telephone number is (571)270-3274. The examiner can normally be reached on Monday - Friday 9:00-6:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ian Jen/
Examiner, Art Unit 3664
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